SUSE Linux Enterprise 11
Singapore OSS Community Launch

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Why Choose SUSE® Linux Enterprise Server 11
The Business Case for Linux

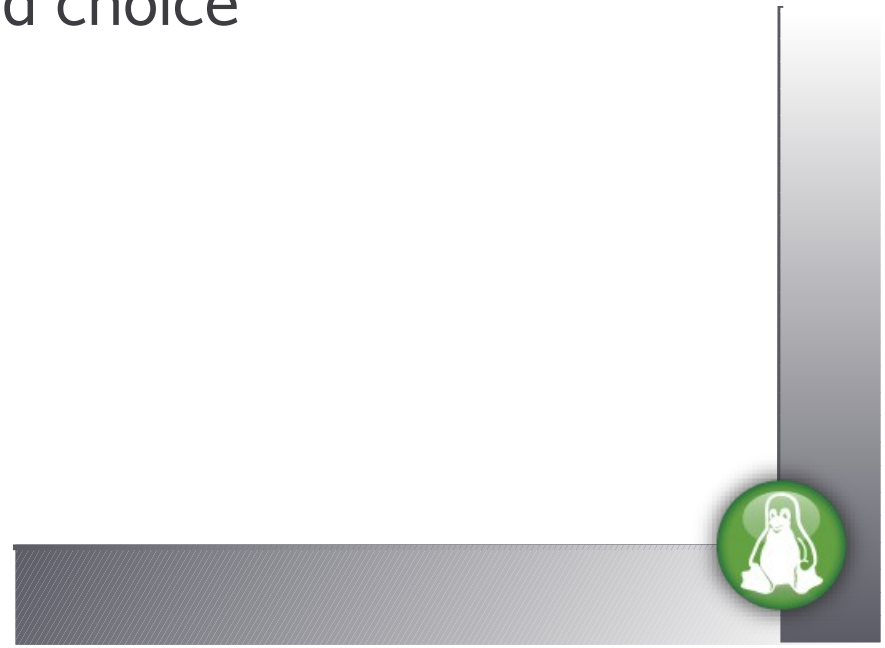
Reduced hardware and software costs

Outstanding reliability, performance and scalability

Vendor independence and choice

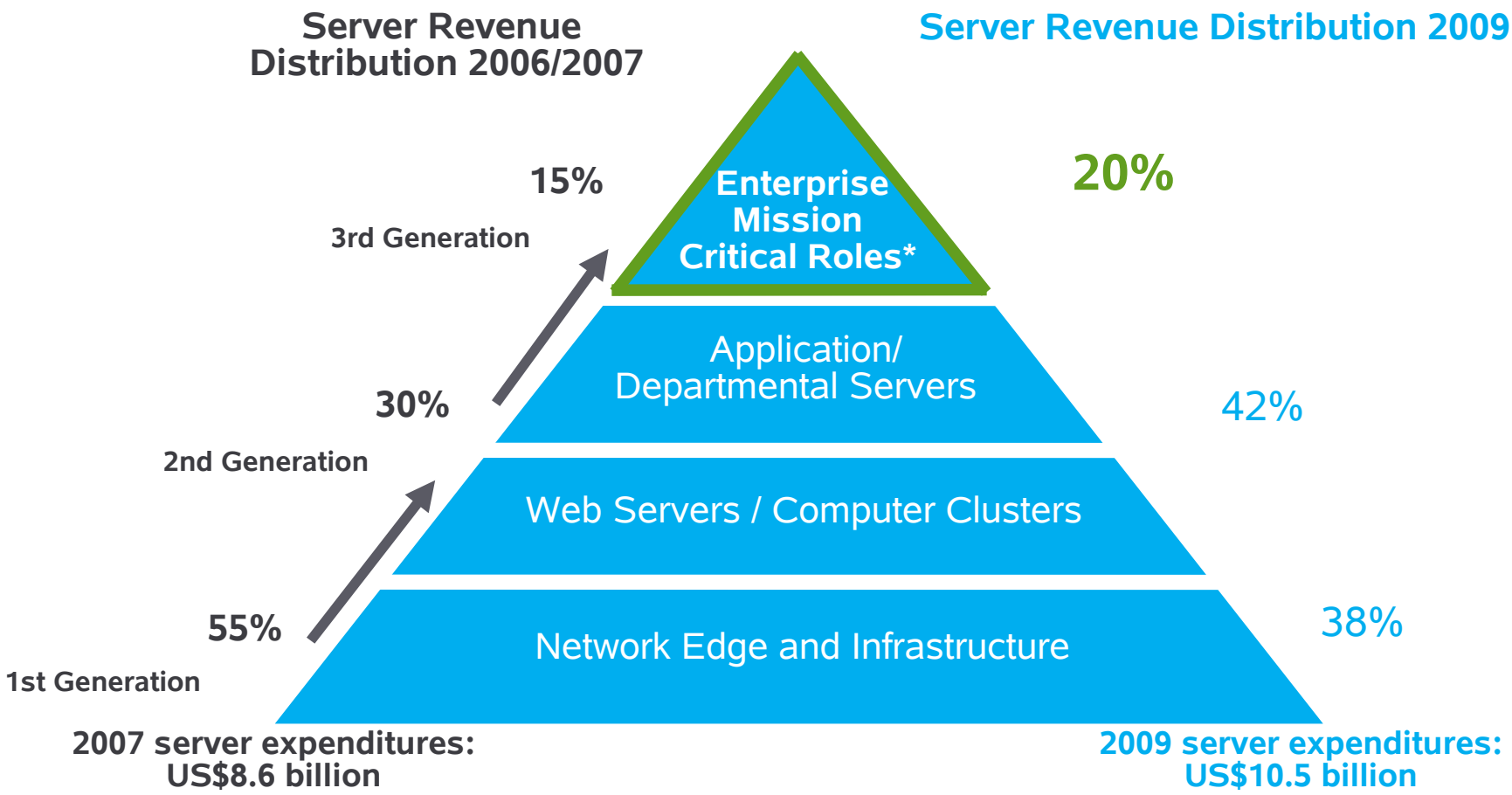
Enhanced security

Business agility



Why Choose SUSE® Linux Enterprise Server 11

Linux Has Reached Its 3rd Generation



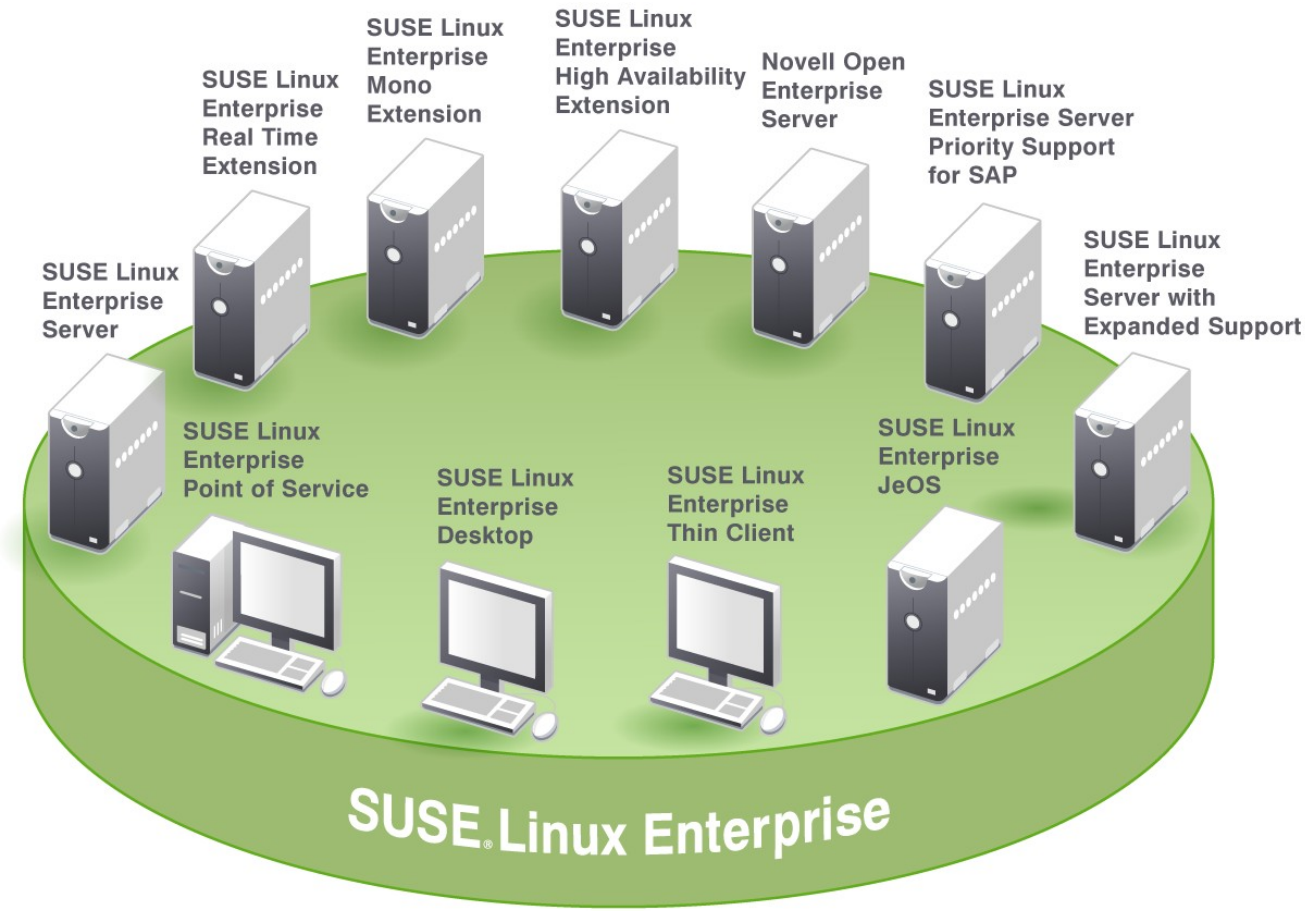
* Also includes virtualized infrastructures, grids, real-time, SOA, fault-tolerant and massively scalable commerce Web sites

Source: Gartner (October 2007), "What Is Third-Generation Linux? "

Agenda

- SUSE Linux Enterprise 11 in a Nutshell
- Mono – Running .NET Applications
- Xen – Enterprise Virtualization
- HA – High Availability & Storage Infrastructure

Introducing SUSE Linux Enterprise



The most interoperable platform for mission-critical computing from desktop to data center – physical and virtual

Mission-Critical & Ubiquitous Computing

- Performance, reliability, efficiency and world-class support
- SUSE Linux Enterprise 11 delivers mission-critical computing at the lowest cost of ownership
- Market leader for SAP on Linux, IBM System z (aka Mainframe) Linux and supercomputing
- Today's IT infrastructure is extremely heterogeneous
- SUSE Linux Enterprise 11 powers your complete environment
  - Desktop to Data Center
  - "Perfect Guest" OS for VMware, Xen, Hyper-V
  - Appliance-ready OS
  - Large ISV ecosystem
  - Robust end user computing solutions

SUSE® Linux Enterprise Server 11
Key Features

- Integrated Systems Management
  - Single server (YaST, Novell Customer Center)
  - Multiple server (AutoYaST, Subscription Management Tool, ZENworks® Linux Management, PlateSpin® Orchestrate)
  - Fast update stack (ZYpper)
  - Novell® Support Link, Support Advisor
- Reliability, Availability, Serviceability
  - Diskless server: Swap over NFS
  - Multipath I/O, Network channel bonding
  - Control groups, CPUset
- Cross Platform Virtualization
  - Integrated Xen hypervisor
  - Optimized as a guest OS for ESX, Hyper-V, and Xen
- Interoperable with other Platforms
  - Cross platform directory integration
  - Heterogeneous systems management (e.g. CIM, WS-Man)
  - POSIX compliance for interoperability with UNIX
- Green IT
  - Tickless idle
  - Granular power profiles
- Comprehensive Security
  - AppArmor application security
  - Trusted Platform Module (TPM) support
- Modular OS and Functional Extensions
  - SUSE Linux Enterprise High Availability Extension
  - SUSE Linux Enterprise Mono® Extension
  - SUSE Linux Enterprise Real Time Extension
- Scalability and Flexibility
  - Supports up to 4096 cores (Itanium) and 512 cores (x86_64)
  - Supports up to 23 TB RAM
  - Runs on x86, x86_64, Itanium, Power and Mainframe processor architectures
  - Supports diverse workloads (e.g. third party ISV, Java, .NET)
  - Optimized performance on physical and virtual systems

Mono – Running .NET Applications

Complete Interoperability for Your Mixed IT Environment

- Heterogeneous data centers are today's reality
- SUSE Linux Enterprise 11 delivers complete Windows interoperability
- Novell and Microsoft are collaborating to deliver cross-platform solutions
- You can even run .NET applications on Linux

Giving you the lowest-cost and most manageable platform for enterprise computing

SUSE Linux Enterprise Mono Extension

- A .NET application framework that allows you to run .NET-based applications on SUSE Linux Enterprise Server
- Key capabilities:
  - Run .NET applications on Linux (including ASP.NET)
  - Mainframe support for .NET applications
  - Performance and scalability advantages over Windows
  - Target Linux from Visual Studio
- Develop anywhere – deploy anywhere
  - Includes a toolchain for Linux
  - Runtime is binary-compatible with .NET on Windows

Demo
SUSE Linux Enterprise Mono Extension

Proof Points for SLE Mono Extension

.NET on Linux: Ability to run .NET applications on SLES 11 and host ASP.NET 2.0, ASP.NET AJAX and ASP.NET MVC enabled application on the Apache Web Server

- Improved interoperability of .NET apps with Java and other legacy Linux/UNIX apps on the same system

Broader Hardware Support: Support for Mainframe-based server consolidation

Performance, Scalability and Cost

- 64-bit support, higher RAM and number of CPU support
- More Cost-effective, no client access license, just support subscription per year
- More secure, not prone to Windows-based viruses

Xen – Enterprise Virtualization

SUSE Linux Enterprise Server
Overview

- Highly reliable, interoperable and manageable server operating system
- Built to power mission-critical workloads in physical and virtual environments
- The natural successor to UNIX, backed by proven services for UNIX migration
- The only Linux recommended by Microsoft and SAP
- Complemented by product extensions that deliver advanced capabilities

SUSE Linux Enterprise Server
Xen Virtualization

- Integrated Xen hypervisor provides reliable, high performance virtualization
- Xen 3.3 delivers advanced capabilities
- Lowest cost solution – Host is included with OS, and you get unlimited VMs per system
- Additional management solutions are available
- Supports latest Intel processor and chipset level virtualization advances
  - Intel VT FlexPriority
  - Intel VT FlexMigration
  - Intel VT for Direct I/O

Cross-platform Virtualization
Virtual Machine Guest

- SUSE® Linux Enterprise Server is the “Perfect Guest” operating system for virtual machines
- Optimized for all three major hypervisors
  - VMware ESX
  - Microsoft Hyper-V
  - Xen
- Most attractive VM guest pricing: Unlimited virtual machine guests for the price of a single subscription
- Close partnerships with VMware, Microsoft and the Xen community

Cross-platform Virtualization
Virtual Machine Driver Pack

- Run your virtual services on unmodified Windows and Linux operating systems with near native performance
  - Run them on a wide variety of operating systems
  - Extend the useful life of your custom and legacy applications
  - Run them with the assurance of enterprise support from Novell®
- Device drivers improve communication between the Xen hypervisor and guest operating system, accelerating network and storage I/O
  - Drivers for Windows Server 2008, 2003, 2000, and XP on Xen
  - Drivers for Red Hat Enterprise Linux 4 and 5 on Xen

Cross-platform Virtualization
Operating Systems Supported

Paravirtual Guest

officially supported on SLES 11:	32 bit	64 bit
SLES 10 SP1	✓	✓
SLES 10 SP2	✓	✓
SLES 11	✓	✓
OES2-NetWare® (SP7)	✓	
OES2-Linux	✓	✓

Full Virtual Guest

officially supported on SLES 11:	Paravirtual Drivers	32 bit	64 bit
SLES 9 and 10	yes	✓	✓
SLES 11	yes	✓	✓
OES2-Linux	yes	✓	✓
Windows 2000 Server	yes	✓	
Windows XP	yes	✓	✓
Windows Server 2003	yes	✓	✓
Windows Server 2008 (enlightened)	yes	✓	✓
RHEL 4	yes	✓	✓
RHEL 5	yes	✓	✓

*Windows Paravirtual Drivers are closed source due to Microsoft DDK license restrictions

Interoperability
Microsoft Technical Collaboration

- Bi-lateral virtualization with Microsoft
- Cross-platform directory integration
  - Samba
- Heterogeneous systems Management
  - CIM adoption
  - Manage SLES servers alongside Windows servers by Microsoft System Center

Demo
Xen Live Migration

High Availability & Storage Infrastructure

SUSE Linux Enterprise High Availability Extension

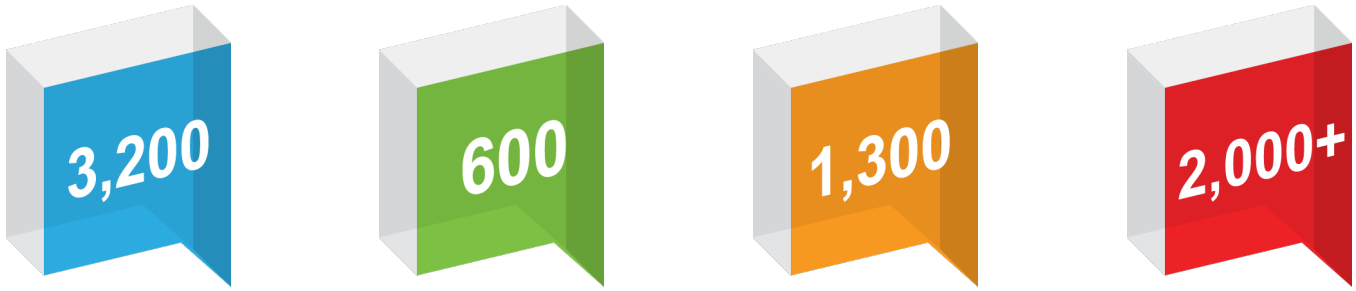
- An integrated suite of robust open source clustering technologies
- Enterprise-class capabilities with the affordability of open source:
  - Flexible, policy-driven clustering solution
  - Cluster-aware file system and volume manager
  - Continuous data replication
  - User-friendly tools
  - Virtualization-aware

Demo
High Availability Failover

Ecosystem
The Power of Working As One

ec-o-sys-tem (ĕk’o-sis’tam) *noun*. A community working together in a common environment considered as a single unit

Ecosystem
Industry's Best Partners



Solution Providers *(VADs/VARs)* **and System Integrators**

Training Partners

Technology Partners *(ISVs/IHVs)*

Certified SUSE Linux Enterprise products

Microsoft

SAP

accenture

IBM

DELL

hp

AMD

intel

lenovo

Customers rely on SUSE® Linux Enterprise Server

Next steps

- Learn more at www.novell.com/linux
- Download an evaluation copy at www.downloadlinux.com

SUSE Linux Enterprise Desktop

- The market's only enterprise-quality Linux desktop
  - Seamless interoperability with with existing systems
  - Dozens of essential productivity applications
  - Easy-to-use, highly secure and “green” desktop experience
  - Flexible and preloaded across wide range of form factors
- New Features
  - Upgrades to key productivity applications
  - Enhanced multimedia capabilities
  - Green IT innovations
  - Nomad remote desktop capabilities
  - Simplified connection management

SUSE Linux Enterprise JeOS
("Just enough Operating System")

- A "bare minimum" configuration of SUSE Linux Enterprise Server that is ideal for virtual appliances
- Key capabilities
  - Easy starting point for creating a custom OS
  - All SUSE Linux Enterprise Server certifications apply
  - Optimized to be the "Perfect Guest" OS across hypervisors
- Complemented by appliance creation and management tools
- Backed by a comprehensive appliance program and partnerships


Novell®